SECTION A - ARS SAFETY MANAGEMENT FUNCTION

CHAPTER V - SAFETY, HEALTH, AND ENVIRONMENTAL OVERSIGHT COMPONENT

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SAFETY, HEALTH, AND ENVIRONMENTAL OVERSIGHT COMPONENT

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CHAPTER V - SECTION A

SAFETY, HEALTH, AND ENVIRONMENTAL OVERSIGHT COMPONENT

A PURPOSE AND SCOPE OF THIS CHAPTER

The purpose of this chapter is to provide the program participant with the necessary information, procedures, and processes required to ensure plans for design/construction and conditions for employment that are free from recognized hazards that may contribute to the occurrence of occupational-related injury, illness or death, or environmental/property damage.

B APPLICABILITY

The contents of this chapter apply to all ARS employees. Each employee is charged with the responsibility of implementing provisions of the ARS Safety, Health, and Environmental Management Program as it pertains to operations within their jurisdiction. The responsibilities listed herein are minimal. They shall in no way be construed to limit individual initiatives to implement more comprehensive practices in order to achieve a greater degree of safety, health, and environmental protection.

C DESIGN/CONSTRUCTION REVIEWS

1 Safety, health, and environmental aspects must be considered, designed, and engineered into all facilities which are acquired or constructed for use by ARS employees. Facility design engineers in many instances are not totally familar with all potential safety/health/environmental hazards created by various materials, equipment, and operations used in ARS facilities, nor are they aware of the special design considerations required to control these hazards. To ensure that appropriate hazard control techniques are applied, design/construction reviews of plans and specifications must be conducted.

Specific policy and procedures for conducting a design review are found in ARS Directive 242.2 Facilities Construction.

D HOUSEKEEPING

In laboratory parlance, we use the term housekeeping to signify not only cleanliness, but a place for everything and everything in its place. A condition of this kind cannot be maintained by an occasional clean up and straightening up of things. Well-defined housekeeping procedures and schedules are essential in reducing the

D HOUSEKEEPING (Continued)

risks of working with hazardous chemicals, toxic substances, and/or biohazardous materials and in protecting the integrity of the research program.

Housekeeping limits physical clutter, controls contamination, and facilitates the efficient use of chemical disinfectants.

The objectives of housekeeping are to:

o provide an orderly and clean work area conducive to the accomplishments of the research program;

o provide work areas devoid of physical hazards;

o prevent the accumulation of materials from current and past experiments that constitute a hazard to laboratory personnel; and

o prevent the creation of aerosals of hazardous materials as a result of the housekeeping procedures used.

The following list outlines a portion of the items requiring critical review. It is not intended to be complete, but is presented as an example of the detailed manner in which housekeeping in a laboratory complex must be viewed.

o Administrative areas, aisles, animal food storage, animal bedding storage, biological safety cabinets, bench tops and other work surfaces, ceilings, change rooms, cleaning solution disposal, cages and cage racks, dry ice chests, entry and exit ways, equipment storage, glassware, general laboratory equipment clean up, hallways, incubators, instruments, insects and rodent control, light fixtures, mechanical equipment areas, floors, maps, pipes - wall/ceiling hung, refrigerators, showers, supply storage, UV lamps, vacuum cleaners, waste accumulations, waste water disposal, vehical maintenance, restrooms, waste receptacles, drains, and vents.

Housekeeping in the laboratory is one of the avenues that leads to accomplishing the research program safely. It is important that housekeeping tasks be assigned to personnel who are knowledgeable of the research environment. The recommended approach to housekeeping is the assignment of housekeeping tasks to the research team on an individual basis for their immediate work

D HOUSEKEEPING (Continued)

areas and on a cooperative basis for areas of common usage.

Personal protective equipment such as belts, gloves, boots, goggles, and aprons must be provided and

used as appropriate during the housekeeping process.

Some housekeeping processes require extensive training to accomplish. The "housekeeper" must be taught the proper methods, processes, and procedures.

E PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING (PPEC)

1 Program Summary

29 CFR 1960, Safety and Health Provisions for Federal Employees, established by Executive Order 12196 and Section 19 of Public Law 91-596 Occupational Safety and Health Act (OSHA), requires ARS to provide equipment and clothing for protection from physical injury or occupational disease in the performance of assigned tasks.

2 References

o OSHA 1910, Subpart I, "Personal Protection Equipment"

o ANSI 287.1, Eye and Face Protection

o ANSI 288.2, Respiratory Protection

o ANSI 289.1, Head Protection

o ANSI 241.1, Foot Protection

3 Policy

It is ARS policy to provide a safe and healthful workplace for employees by applying engineering controls or work practices which prevent worker exposures to levels of materials considered dangerous to worker health and safety.

In cases where the manipulation of the work environment or administrative controls do not provide adequate worker protection, or are not feasible, ARS will provide, maintain, and require the use of PPEC according to OSHA 1910, Subpart I, "Personal Protective Equipment."

4 Responsibilities

a The Area Director, Center Director, Location

Coordinator, and Research Leader, will:

E PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING (PPEC) (Continued)

(1) Establish a written PPEC program for employees within their jurisdiction including, but not limited to:

(a) Routine use - employer and employee responsibility, maintenance and care procedures, medical limitations, selection, issuance, and training practices, operating procedures.

(b) Confined space entry - atmospheric testing for air contaminants and percent oxygen, specific PPE (e.g., respirators, life lines), rescue procedures (e.g., buddy system), specific education and training.

(c) Emergency situations/spill containment - specific PPE (e.g., respirators, coveralls), rescue procedures, first-aid procedures.

(2) Make sufficient resources available for implementing the program.

(3) Eliminate recognized hazards to the maximum extent practicable through:

(a) Engineering Changes (e.g., changes in equipment, removal of hazard producing equipment, physical separation of the employee from the hazard, etc.).

(b) Administrative Changes (e.g., reduced time of exposure, changes in work procedures, substitution of less hazardous chemicals, tools, and equipment).

(c) Provision of PPEC (e.g., respirators, safety glasses, hearing protection, etc.). The exclusive use of PPE should occur only after the feasibility of engineering and administrative alternatives has been documented and evaluated. However, they may be used with these alternatives or exclusively if engineering and/or administrative controls cannot be used.

E PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING (PPEC) (Continued)

b Chief, Safety, Health, and Environmental Management Branch, will:

(1) Provide guidance and policy interpretation to Area Safety and Health Managers and Cluster Environmental Protection Specialists, Part-time/Full-time Federal Employees/A76 Contractors and Location Collateral Duty Safety Officers as required with respect to PPEC.

(2) Provide PPEC training advice and assistance as required.

c Area Safety and Health Managers, Cluster Environmental Protection Specialists/A76 Contractors, Location Collateral Duty Safety Officers, and Safety and Health Committees or Representatives, will:

(1) Assist organizational units within their jurisdiction to establish PPEC programs.

(2) Monitor and evaluate the effectiveness of PPEC programs. (This includes monitoring accident reports to determine major accident causes which could be eliminated by the use of PPEC.)

(3) Assure that PPEC issued to ARS employees are of an approved type as specified in regulations of the OSHA and applicable design specifications of the American National Standards Institute, or the National Institute of Occupational Safety and Health.

(4) Assist management representatives to obtain approved PPEC.

(5) Develop, evaluate, and adopt solutions, in concert with the Safety and Health Policy Staff, Facilities Division, to special hazards for which no PPEC is readily available.

(6) Evaluate the effectiveness of the local PPEC program on an annual bases.

E PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING (PPEC) (Continued)

(7) Bring to the attention of the appropriate management official information concerning employees and/or supervisors who chronically violate regulations governing the use of PPEC.

d Supervisors, will:

(1) Review operations within their area of jurisdiction on a scheduled basis (at least annually) for the purpose of identifying hazards which require the provision of PPEC.

(2) Seek timely advice and assistance on practical methods of reducing hazards identified in their area of jurisdiction. (This includes contacting management when subordinates fail to use prescribed PPEC required for protecting their safety or health.)

(3) Post all areas where wearing of PPEC is mandatory with clearly visible signs denoting the hazard and type of protection required.

(4) Periodically inspect PPEC to ensure its effectiveness in protecting employee safety and health. (This includes ensuring that equipment and clothing supplied to, or by, the employee is "approved" and adequate for the task assigned.)

(5) Provide employees with training in the proper use and care of PPEC on a routine basis.

(6) Provide facilities to sanitize or repair PPEC as required.

(7) Set a proper example by wearing approved PPEC when in areas where such equipment is required.

(8) Determine the need for PPEC for cooperative and part-time/summer-hire employees and ensure it is available for their use.

E PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING (PPEC) (Continued)

e Employees, will:

(1) Report all hazards identified during the conduct of duties to the supervisor in charge.

(2) Use all PPEC provided for protection against job-related hazards.

(3) Cooperate with management in obtaining, using, and maintaining approved PPEC.

(4) Bring PPEC in need of sanitizing, repair, or replacement to the immediate attention of the supervisor for corrective action.

(5) In cases where the employee does not agree with PPEC procedures, DIRECTIVE 463.2, Employee Grievances, should be consulted for proper procedures.

F CONCEPTS AND TECHNIQUES OF MACHINE SAFEGUARDING

1 Program Summary

Crushed hands and arms, severed fingers, blindness - the list of possible machinery-related injuries is as long as it is horrifying. There seem to be as many hazards created by moving machine parts as there are types of machines. Safeguards are essential for protecting workers from needless and preventable injuries.

A good rule to remember is: Any machine part, function, or process which may cause injury must be safeguarded. Where the operation of a machine or accidental contact with it can injure the operator or others in the vicinity, the hazard must be either controlled or eliminated. The bottomline is that safeguarding prevents contact with hazardous mechanical motors and actions (e.g., rotating, reciprocating, cutting, punching, bending) or nonmechanical hazards (e.g., electrical, high pressure, noise vibration, hazardous substances).

2 References

o 29 CFR 1910 General Industry Standards

o Accident Prevention Manual for Industrial Operations

F CONCEPTS AND TECHNIQUES OF MACHINE SAFEGUARDING (Continued)

o Human Engineering Guide to Equipment Design:

Van Colt, H.P. and Kinkade, R.G., eds.; U.S. Government Printing Office, Washington, D.C.

3 Safeguarding Responsibilities

Safety in the workplace demands cooperation and alertness on everyone's part. Supervisors, researchers, and other workers who notice hazards in need of safeguarding, or existing systems that need repair or improvement, should notify the proper management official immediately.

Supervisors have these additional special responsibilities with regard to safety in the laboratory:

o Encourage safe work habits.

o Correct unsafe work habits.

o Explain all the potential hazards associated with the machines and processes in the work area.

o Respond to requests from employees for information concerning safeguarding.

o Communicate the safety needs of the worker to the Center Director, Location Coordinator, and Research Leader.

o Communicate Agency safety, health, and environmental rules and policies to the employees.

4 Training

Even the most elaborate safeguarding system cannot offer effective protection unless the worker knows how to use it and why. Specific and detailed training is therefore a crucial part of any effort to provide safeguarding against machine-related hazards. Thorough training should involve instruction or hands-on training in the following:

o a description and identification of the hazards associated with particular machines;

o the safeguards themselves, how they provide protection, and the hazards for which they are intended;

F CONCEPTS AND TECHNIQUES OF MACHINE SAFEGUARDING (Continued)

o how to use the safeguards and why;

o how and under what circumstances safeguards can be removed, and by whom (in most cases, repair or maintenance personnel only); and

o what to do (e.g., contact the supervisor) if a safeguard is damaged, missing, or unable to provide adequate protection.

This kind of safety training is necessary for new operators and maintenance or set up personnel, when any new or altered safeguards are put in service or when workers are assigned to a new machine or research operation.

5 Protective Clothing and Personal Protective Equipment

Engineering controls, which eliminate the hazard at the source and do not rely on the worker's behavior for their effectiveness, offer the best and most reliable means of safeguarding. Therefore engineering controls must be the first choice for eliminating hazardous mechanical motions and actions and/or nonmechanical hazards. But whenever an extra measure of protection is necessary, operators must wear protective clothing or personal protective equipment.

It is important to note that protective clothing and equipment themselves can create hazards. A protective glove which can become caught between rotating parts, or a splash facepiece which hinders the wearer's vision, for example, require alertness and careful supervision whenever they are used.

Other aspects of worker's dress may prevent additional safety hazards. Loose-fitting clothing might possibly become entangled in rotating spindles or other kinds of moving machinery. Jewelry, such as bracelets and rings, can catch on moving parts and lead to serious injury by pulling a hand into the danger area.

For specific requirements for using personal protective equipment and clothing, reference Section E of this chapter (i.e., Chapter V).

G HAZARD WARNING SIGNS

1 Program Summary

Signs are used internationally to indicate the actual or potential presence of hazards. Signs for ARS laboratories are used for many purposes. Examples include:

o Identifying hazardous equipment, materials, and special workplace hazardous conditions (e.g., biohazards, radiological, contaminated animals, infectious wastes).

o Identifying means of egress.

o Identifying safety equipment (e.g., fire equipment) and procedures.

o Identifying electrical, plumbing, piping, and other facility-type equipment.

2 References

o 29 CFR Part 1910.145 Specifications for Accident Prevention Signs and Tags

o Hazard Communication Standard

o Chemical Hygiene Program

3 General Policy

o Signs will be used, as necessary, to identify hazards associated with the workplace.

o Signs will be displayed only to signify the actual or potential presence of a hazard.

o Signs can be obtained commercially, however, the signs must comply with the standards set forth in CFR Part 1910.145.

o Signs will be included as an integrate part of the Location's Inspection Program. Outdated, damaged, or inappropriate signs will be removed, updated, or replaced as required. Information listed on the signs will be complied and provided to the Local Fire Department/Emergency Response team as part of the Community-Right-to-

Know Program.

H COLOR CODING

Color coding is used to identify specific hazards. It is used to eliminate confusion and misunderstanding.

I PUBLIC VISITOR PROTECTION

Visitors to ARS facilities are often exposed to the same hazards as ARS employees, however, due to a lack of familiarity with the facility and its associated operations, they have a higher potential for job related injury/illness. Before visitors are conducted through an ARS facility the following actions will be taken by the ranking supervisor of the area to be visited, or his designated representative:

1 Visitors will be briefed on the nature of the operation to be visited.

2 Visitors will receive a briefing on the safety hazards they may be exposed to.

3 If protective equipment is required in the area to be visited, it will be provided. Examples are hearing protection, non-prescription eyewear, toe guards and hard hats. Operations with a high number of visitors should maintain required protective equipment for the visitors.

4 Visitors will also be briefed on the chemical, radiological, or biological hazards they may be exposed to, and any required action the visitor must take to limit or prevent exposure.

5 Where potential physical, chemical, radiological, or biological hazards exist, the visitors will be escorted at all times to prevent contact/exposure to the hazards.

6 Any incident involving injury/illness or actual harmful exposure to hazardous chemicals or biological agents will be reported immediately to the operation supervisor who will investigate and, in turn, report it to the AD, ASHM, and SHEMB.

7 Refusal of a visitor to utilize required protective equipment may be considered reason to deny the visitor entry into the area.